Appendix B: International case study – Capio[1]

Summary

- Capio operates a pan-European healthcare network[1] with an organisational strategy designed around innovation and development of evidence-based best practice in its specialist centres. This is then rolled out across the network by inter-site training and knowledge sharing, and implementation of shared protocols
- Capio has developed a rapid recovery model for joint replacement surgery (and other areas of care) which has led to significant proportions of hip/knee replacement patients being discharged on the day after surgery, or treated as day cases in some centres
- The rapid recovery model includes multiple elements aimed at reducing the physiological and psychological stress of surgery on the patient, eg:
  - use of local anaesthesia
  - no catheterization or compression stockings during surgery
  - mobilization within a few hours of surgery and intensive physiotherapy
  - hospital spaces and processes designed to encourage mobility and activity
  - extensive education and setting of expectations

Delivery model

- Capio is a leading, pan-European healthcare provider offering a broad range of medical, surgical and psychiatric healthcare services, through general acute hospitals, specialist hospitals and clinics, and primary care units
- It serves the public and independent sectors

Background and history

- Capio has been in operation in Europe since 1994
- In the last decade, it has developed a medical strategy to improve quality of care by implementing new, evidence-based protocols and an empowered organisation to drive implementation
- It is a leader in the field of rapid recovery in the countries in which it operates

Health system context

- Capio operates in Sweden, Norway, France and Germany under a range of reimbursement models
- In Sweden it operates hospital services for public patients under contract to local commissioners
- Capio was an early adopter of DRG payments[2] and is working on the transition to quality-based remuneration

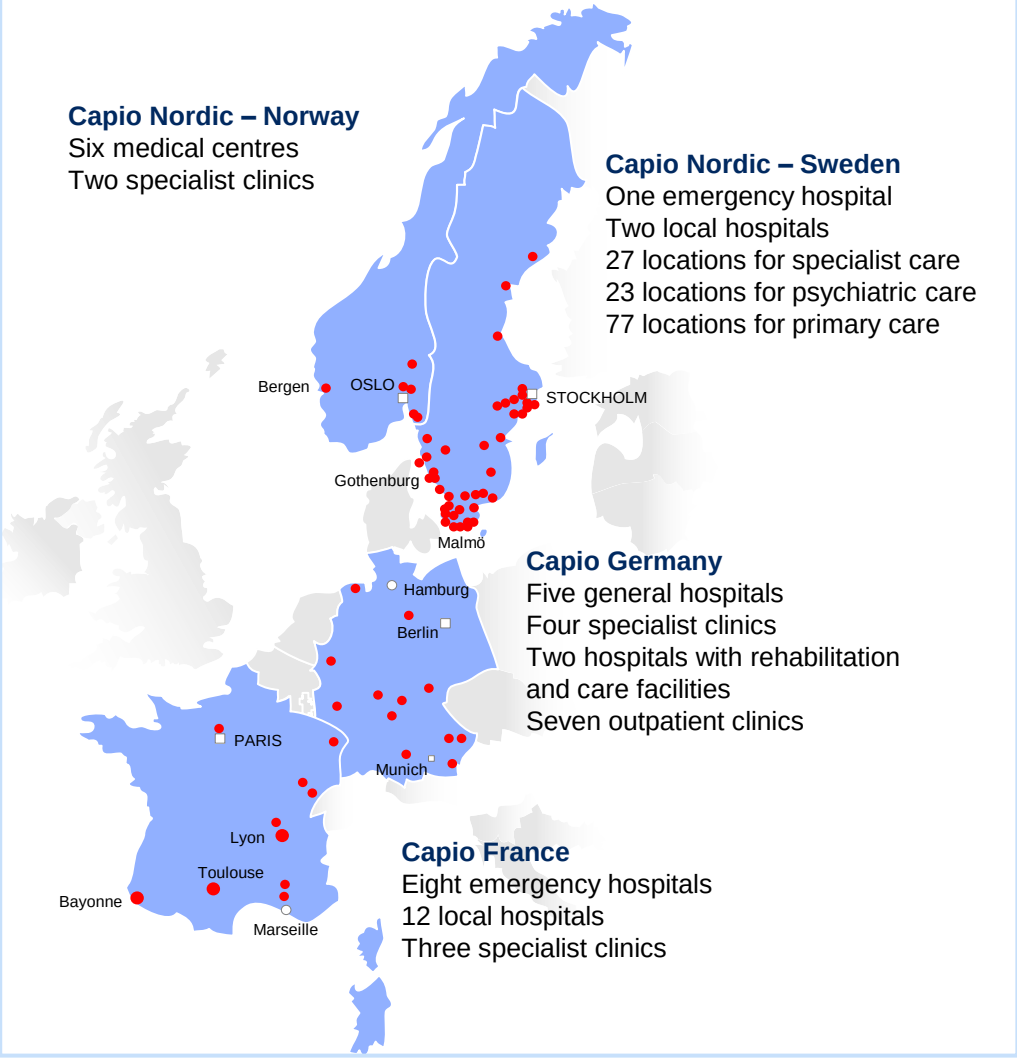
DRG, diagnosis-related group (similar to the HRG-based payment system used in the NHS).

[1] This case review was externally commissioned. Sources included site visits, interviews and review of company reports/information systems. Specific additional sources are given where appropriate.

[2] Capio's corporate headquarters are in Sweden.

[3] In the health systems in which it operates.

Capio is a pan-European healthcare provider with hospitals and healthcare centres in four countries



Hospitals in this case study

Capio Movement, Halmstad

- **Specialist orthopaedic, elective-only, private hospital** providing orthopaedic surgery (including joint replacement, revisions, arthroscopy), rheumatology, sports injury, rehab, imaging and diagnostics
- Casemix of patients by ASA level:
  - level 1 – 32% of patients
  - level 2 – 47% of patients
  - level 3 – 20% of patients
- Three operating theatres (two for hip/knee replacements)
- 16 ward beds and four recovery room beds
- Staff (all dedicated to orthopaedics):
  - six surgeons (three FTEs; three locums) + two anaesthetist FTEs
  - 29 nursing staff
  - one physiotherapist

Capio St Göran, Stockholm

- **General acute hospital in central Stockholm**[1]
- ~300 beds and ~1,850 employees
- **Privately-operated hospital serving patients under a 10-year contract with Stockholm health system**, which runs to 2022[2]
- Overall activity (in 2013): 200,000 outpatient attendances, 30,000 inpatient spells; 70,000 A&E visits
- Orthopaedic staff and resources:
  - 5-6 operating theatres[3] and 56 ortho inpatient beds
  - 24 orthopaedic surgeons + eight trainees
  - 53 nurses and 59 nursing assistants
  - 23 physio and occupational therapists
  - 24 other staff
- Casemix of patients by ASA level:
  - level 1/2 – 45% of patients
  - level ≥3 – 55% of patients

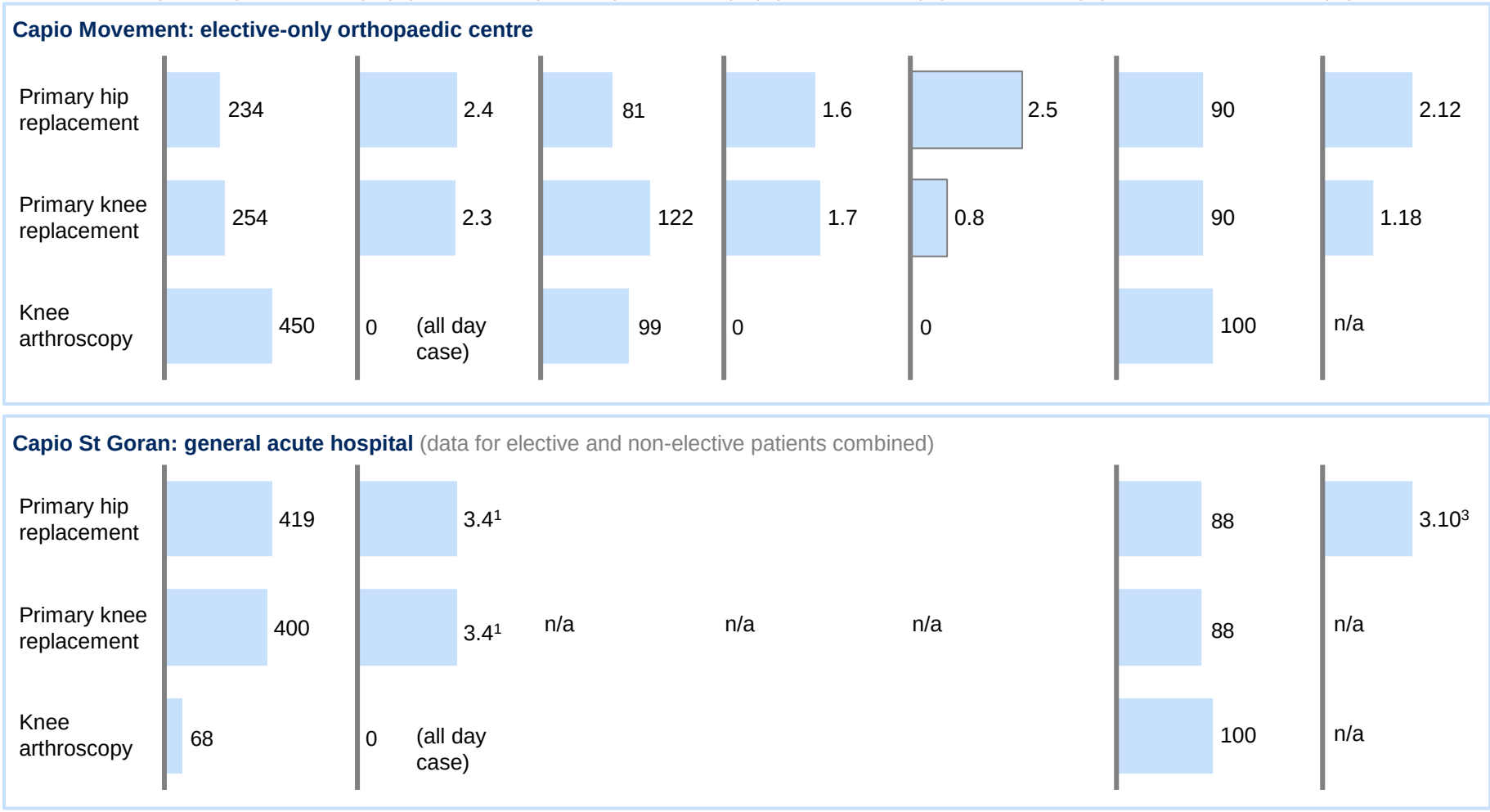
FTE, full-time equivalent; ASA, American Society of Anesthesiologists scoring system for medical fitness of patients requiring surgery.

[1] Provides a broad range of specialties excluding maternity, paediatrics and ophthalmology.

[2] Capio St Goran is owned by Stockholm County Council but operated by Capio under contract to serve publicly-insured patients. The first 10-year contractual term renewed in 2012.

[3] Exact number dedicated to orthopaedics may vary (13 operating theatres in total across the full hospital).

Capio: Volume and outcomes for selected orthopaedic pathways



ASA, American Society of Anesthesiologists scoring system rates the medical fitness/complexity of patients requiring surgery. 1 is least complex; 5 is most complex.

[1] Average length of stay by ASA category: ASA 1 to 2 = 3.27 days; ASA 3 to 4 = 3.59 days. Average length of stay is below 2 days for elective patients.

[2] Includes readmissions to any other hospital provider in Sweden.

[3] Two-year revision rate (1-year data not available).

Capio's approach to quality and productivity is embedded throughout the organisation: In its values, delivery of care and culture of continuous improvement

Approach
Four cornerstones of quality

Modern medicine – challenging old habits, developing and implementing proven innovative methods

Good information – reduces patients' anxiety, increases under-standing and allows patients to be part of decision-making

Kind treatment – balancing technical aspects of medical treatment with kindness and compassion

Well-designed and equipped environment – modern and inviting premises as well as modern equipment

Practice
People make the difference

The basis
Values

Quality

Compassion

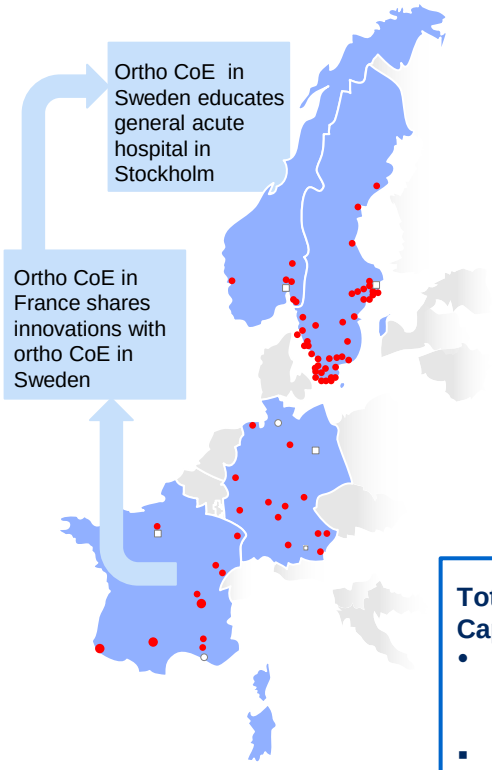
Care

Value based, quality driven, with people making it happen

capio.com/en/about/the-capio-model/

Capio's centres of excellence (CoE) improve practice and proven innovations are rolled out to other sites through training and protocols

How this works in practice



Establish centres of excellence

- In Sweden, Movement and Ortopediska Huset are also established CoE within orthopaedics
- Capio Artro Clinic appointed as a CoE by FIFA, and will help Capio spearhead medical development

Total knee replacement surgery at Capio Clinique Sainte Odile

- Day case rate:
  - 0% in 2010
  - 33% in H2 2014
- Inpatient average length of stay:
  - 6.8 days in 2010
  - 2.9 days in H2 2014

Standardise care protocols in line with latest evidence

- Capio Sainte Odile ortho CoE in France pioneered day case primary knee surgery (see box) and shared lessons learnt with other sites
- Protocols developed for implementation of a best-practice knee prosthesis surgery protocol using LIA
- Between November 2014 and May 2015, Movement orthopaedic clinic increased the share of primary hip/knee replacement patients discharged on the day after surgery from 3% to 76%
- Protocols disseminated to relevant units across the network

Influencing health systems to support most effective care

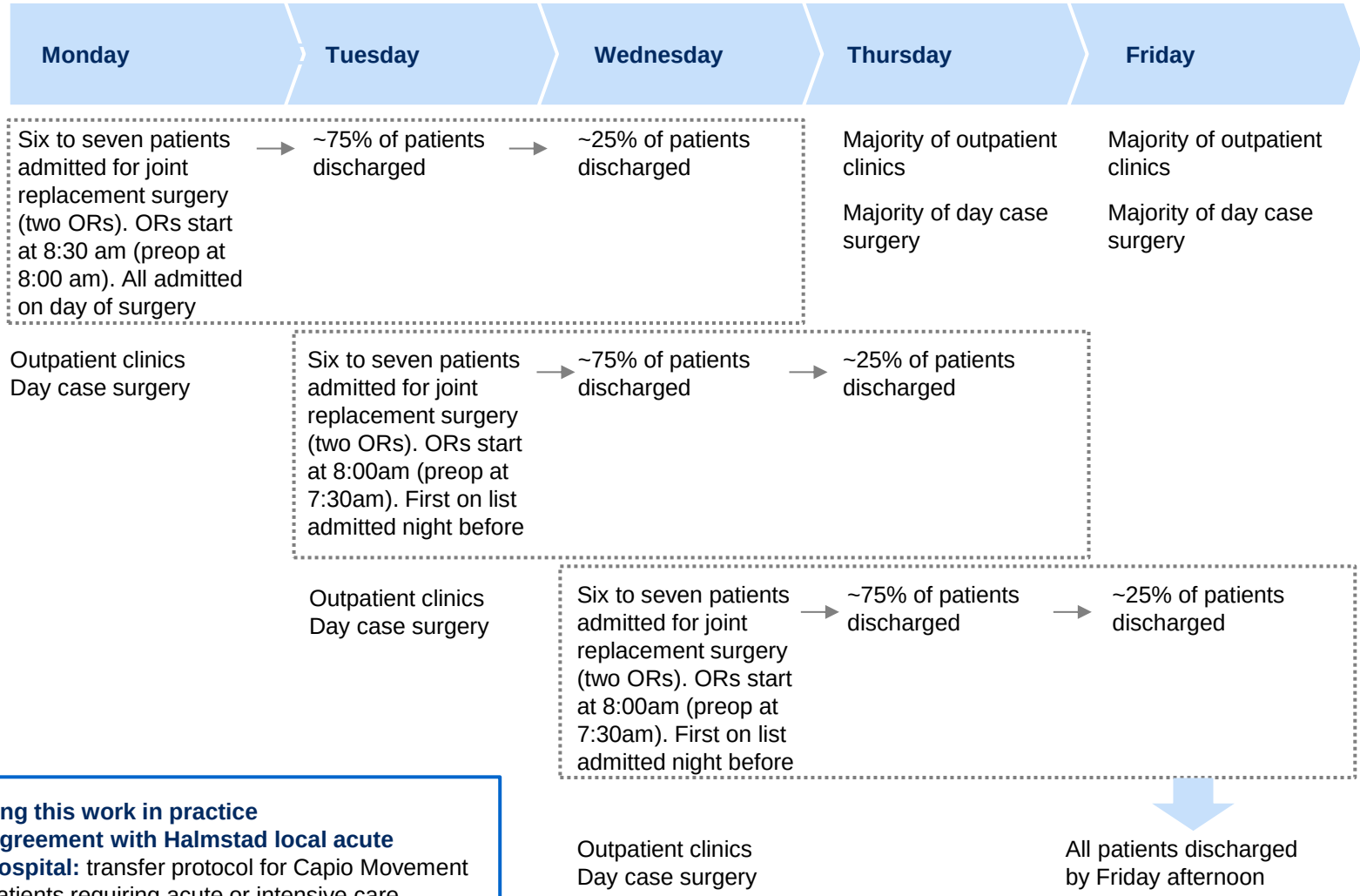
- Teams in Capio France have identified procedures which can be safely and effectively delivered as day surgery, eg joint replacement, colectomy and hysterectomy, and have influenced the French government to change regulations to capture this in national reimbursement policies[1]
- Capio in Sweden convinced a private health insurer that patient TVs are a bad idea as they discourage movement and encourage longer length of stay[2]

FIFA, Fédération Internationale de Football Association; LIA, local infiltration analgesia.

[1] Removal of Borne Basse constraints on reimbursement of short stays

[2] Insurer requested that Capio Movement introduced TVs to enhance patient experience, but withdrew request following discussion.

Capio Movement's approach to theatre management



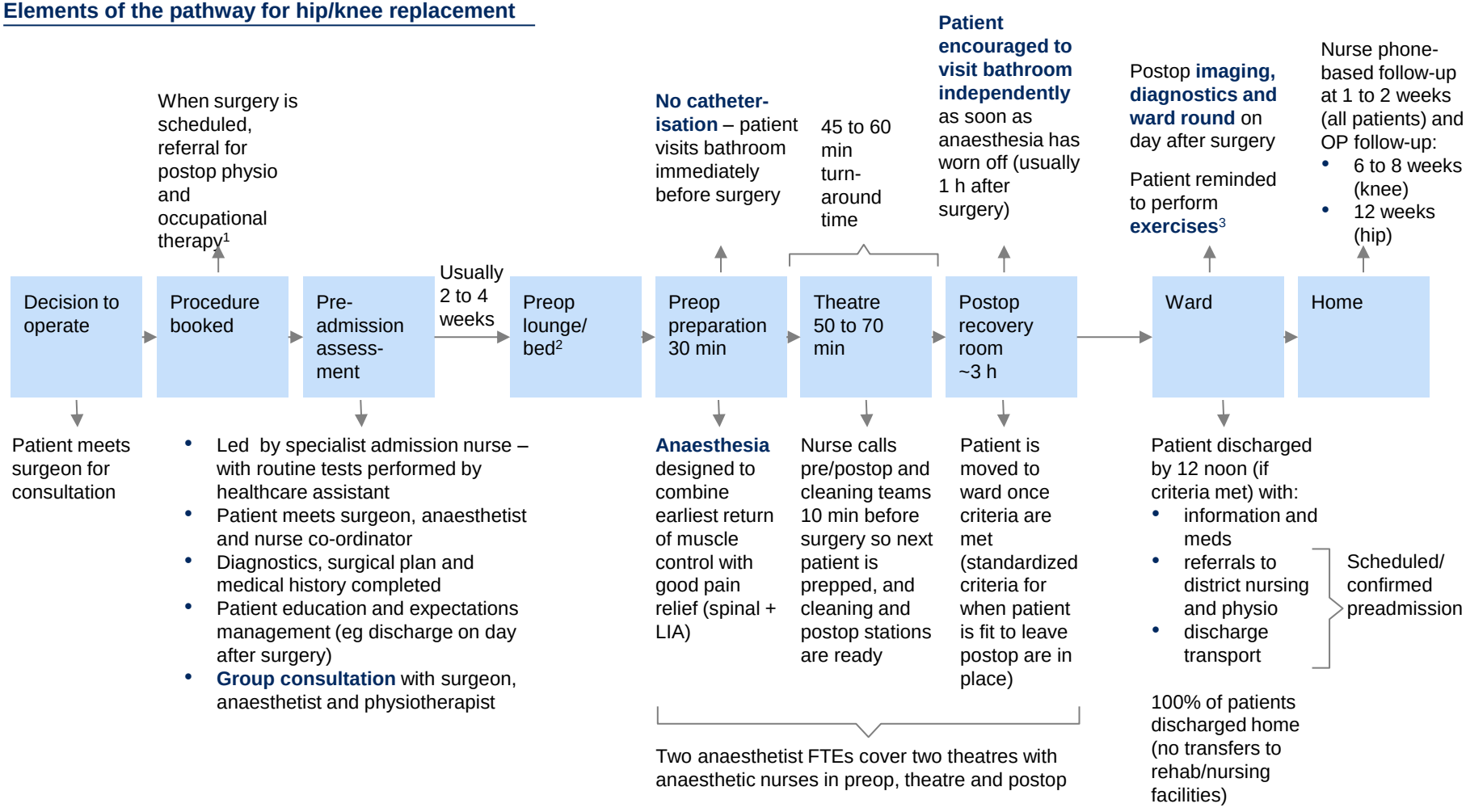
Making this work in practice

- **Agreement with Halmstad local acute hospital:** transfer protocol for Capio Movement patients requiring acute or intensive care

OR, operating room (theatre)

Capio Movement's approach to optimising the joint replacement pathway

Elements of the pathway for hip/knee replacement



LIA, local infiltration anaesthesia; gabapentin to reduce the required dose of morphine and improve pain relief, steroids to reduce the need for pain relief and reduce nausea. Overall there is a reduced risk of mortality when regional anaesthesia used instead of sedation.

[1] Scheduled for approximately 1 week after knee replacement and 3 to 4 weeks after hip replacement.

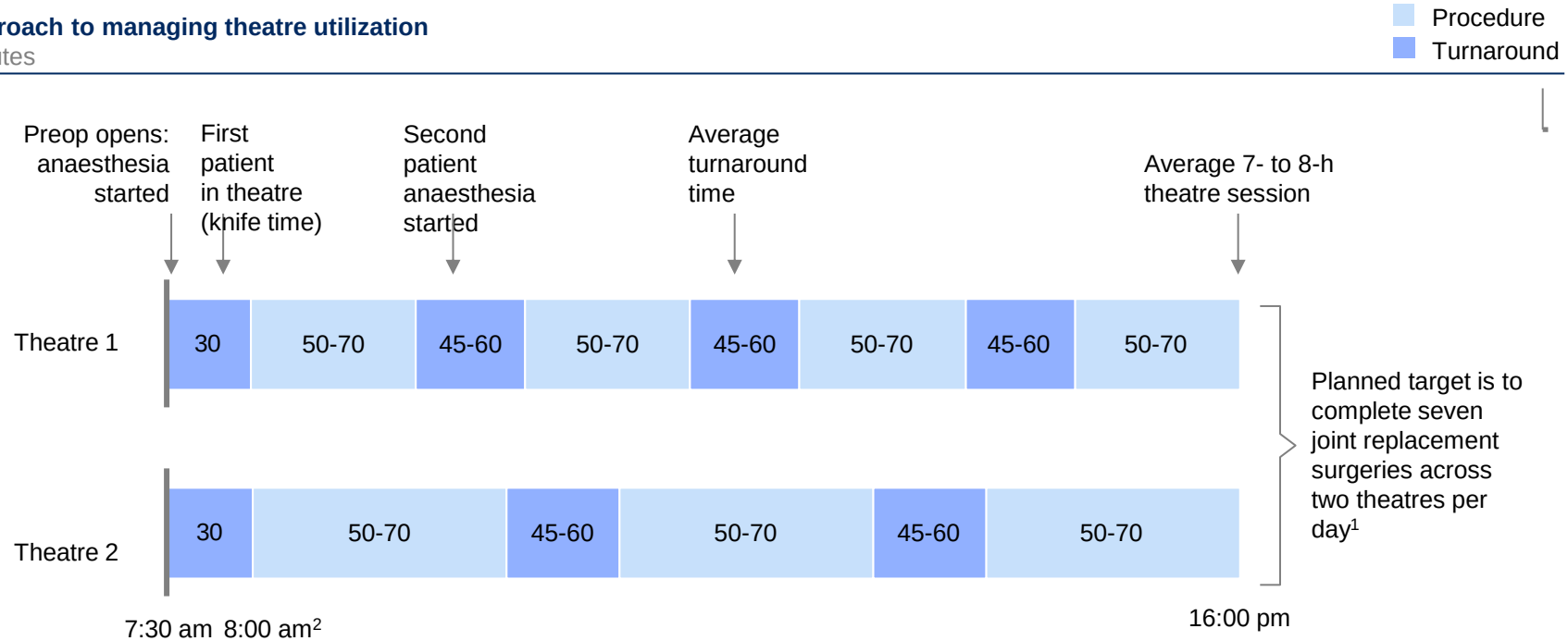
[2] See previous slide for approach to day-of-surgery admission.

[3] Exercises taught to patient prior to surgery – to be performed three times on day after surgery.

Capio Movement's approach to theatre scheduling and efficiency

Approach to managing theatre utilization

Minutes



- Theatres are staffed by ortho-dedicated theatre teams, typically with three assistants per theatre:
  - one surgeon
  - one anaesthesia nurse
  - one scrub nurse (six scrub nurse trainees/year – approx 2 to 4 weeks for each placement)
  - one surgical nurse
  - +/- one trainee orthopaedic surgeon (one to two trainees/year – approx 2 to 3 months each)
- Two anaesthetist FTEs cover both theatres (both are active at the beginning of each surgery, then only 1), preop and recovery rooms
- Theatres are scheduled for seven joint replacement procedures per day across two theatres on Mondays and Tuesdays, and for four joint replacements in one theatre on Wednesdays (with other types of inpatient procedure scheduled for the second theatre on Wednesdays)
- If planned procedures are completed early, staff can leave early
- If procedures take longer than anticipated, staff work over-time

[1] Theatres may run over but operations should not be scheduled with expected run over unless circumstances are exceptional.
[2] Knife time starts at 8:30am on Mondays (8:00am Tuesdays to Fridays).

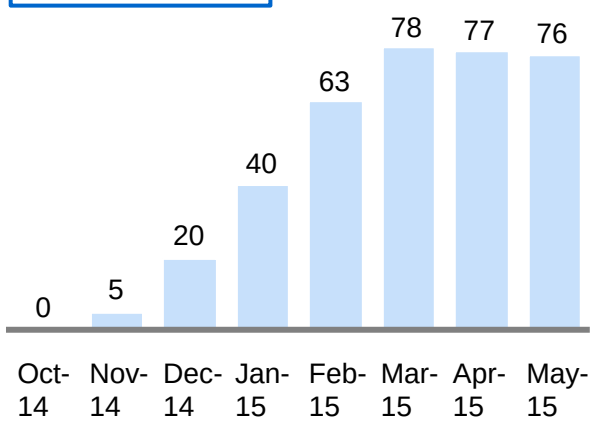
Capio Movement reduced hip/knee replacement length of stay (LOS) by encouraging and supporting rapid recovery

Primary hip/knee replacement patients discharged on day after surgery

% patients with LOS of 1 day

In the NHS in 2013/14, LOS for 1% of elective hip/knee replacements[1] was 1 day

Casemix (ASA[2]):
- 32% level 1
- 47% level 2
- 20% level 3



Clinical impact

- Early mobility reduces risk of DVT[5]
- Shorter LOS reduces risk of hospital-acquired infection and complications

Multiple mutually-reinforcing actions make it possible to achieve early discharge

- Optimised anaesthesia for early mobility
- Patients not catheterized during surgery:
  - lower risk of infection/inflammation
  - individual is treated as a healthy person, not a sick patient
  - important for patients with prostate problems
- Compression stockings not used[4]
- Patients encouraged to mobilize as soon as spinal anaesthesia wears off:
  - independently visiting the bathroom
  - changing into their own clothes (surgical gown makes you 'feel like a patient')
- Patients encouraged to be active:
  - no TVs: people watching TV are less mobile
  - patients are encouraged to eat with staff in a shared dining room – on outside terrace in summer
  - 'sprint tracks' in corridors create an atmosphere focused on what is healthy
- **However,** no patient is discharged until/unless discharge criteria are met and they are well and ready

Productivity impact

- Reducing LOS freed up ward beds which allowed the unit to increase volume of joint replacement admissions from 8 to 21 per week (factor of 2.6)[3]

Enablers

- **Evidence-based** approach
- **Empowered** organisation and staff
- **Audit** – Capio conducted a full audit in August 2015 to review outcomes of all patients in this pathway[6]

Barriers to further improvement

- **Incentives:** Swedish tariff does not reimburse for a day case at the same rate as for an inpatient admission
- **Out-of-hospital care:** early discharge requires strong primary/community care in patient's locality; not available everywhere

[1] Primary OPCS codes W371, W381 and W401

[2] American Society of Anaesthesiologists (ASA) scoring system for medical fitness of patients.

3 In practice the average volume/week of hip/knee joint replacement is 16 to 18 as other types of surgery are also done (eg revisions).

4 Only used for cruciate ligament surgery and hip arthroscopy. Not used for other surgeries as benefits considered limited (cumbersome and difficult for patients); better to leave the wound to bleed during surgery (reducing DVT risk five-fold), and lower overall deep vein thrombosis (DVT) risk because patient mobilises early after surgery.

5 Risk of DVT reduced 30-fold in patients who are mobile within 24 hours of surgery compared to patients who are not mobile within this period.

6 Using data from the National Board of Health and Welfare and covering all patients treated in H1 2015.

Hospital Episode Statistics, HSCIC, 2013/14

Rapid recovery in joint replacement patients requires behavioural changes in patients and care providers

Treating the patient as a ‘healthy, mobile person’

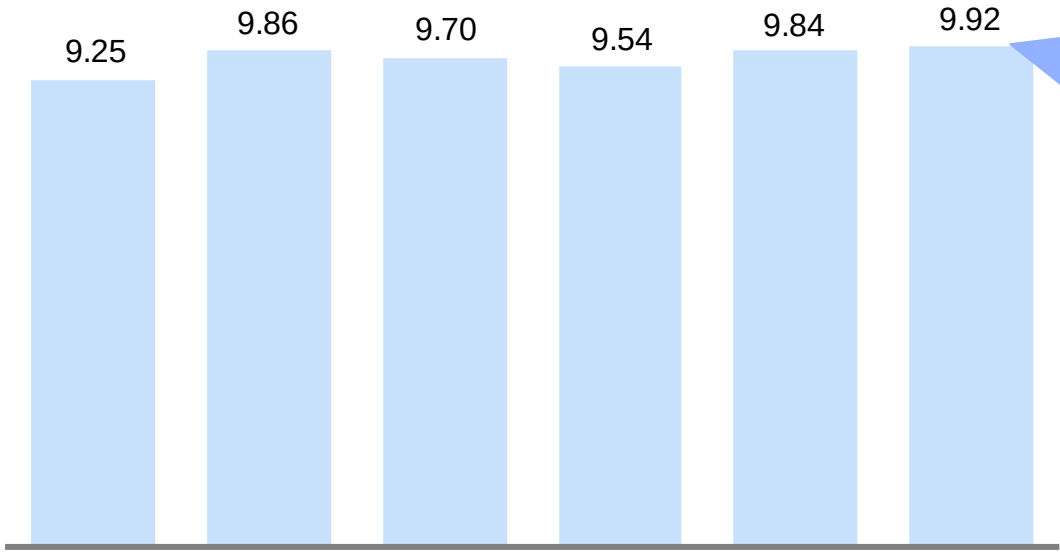
- **Encouraging independence** before and after surgery:
  - meals served in a shared restaurant
  - no catheters
  - optimised anaesthesia and pain relief
  - physio exercises taught to the patient before admission
  - no watching TV in bed
  - ‘normal life’ is good for patients: at home, with friends/family, taking part in daily activities

- Consistent, reinforced **setting of expectations**:
  - during every interaction (first OP appointment, preop assessment, day of surgery) the patient is advised/reminded they can expect to be discharged on the day after surgery
  - education on the **benefits** of the approach:
    – lower risk of hospital-acquired complications
    – lower risk of deep vein thrombosis
    – faster recovery
    – lower anaesthesia risk
- **Discharge preparation** is planned preadmission:
  - scheduled follow-ups with community care and physio
  - discharge transport arranged

Patient's are highly satisfied with their experience at Capio Movement

Patient satisfaction scores for Capio Movement, Q3 2013 to Q4 2014

Score out of 10[1]



	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014
n:	24	29	33	37	32	38
Friends and Family test:[2]	100%	100%	100%	100%	100%	100%

[1] Survey question: 'Overall, how satisfied were you with your inpatient visit? Score on a 10-point scale (1 lowest; 10 highest)'
[2] Survey question: 'Would you recommend this clinic to someone else? (yes/no)'

Organisation of orthopaedic wards and ward staffing at Capio St Göran general acute hospital

Orthopaedic ward set-up[1]

25 dedicated elective beds (in discrete section)

Staffing model:

- 49 nursing FTEs
- Nursing staff rotate between the three areas/sections:
  - flexibility
  - learning and career development
- Support staff have clinical backgrounds, eg quality controller is a nurse, and can flex to support nursing staff if required

25 dedicated non-elective beds (in discrete section)

Six flexible beds
(in discrete section) –
area can be designated elective or non-elective as required

Staffing model

- Hospital staffing is organized on a **points system:** employees need to achieve a certain number of points every month to have worked 'full time'. Evenings, nights and weekend shifts have higher points/hour than standard week-day hours
- Voluntary (always, never forced), **flexible approach to manage variation in volumes of activity:**
  - if activity is low and there is overstaffing, staff are asked if anyone wants to go home early
  - staff can indicate in advance if they would be happy not to work an upcoming shift, and if activity is low they'll get a phone call to tell them it's ok not to come into work
  - if activity is very high, co-ordinators will call staff in
- Following a period of significant nursing shortage, the orthopaedic department **invited all staff to identify and discuss ways in which the traditional nurse-to-patient ratio could be lowered** without compromising patient experience, safety or outcomes. The best ideas were acted on, eg:
  - **merging of groups** to increase flexibility
  - **outsourcing of tasks** to other staff groups:
    – non-clinical staff taking on more tasks (eg refilling stores and managing stock)
  - **upskilling of nursing assistant** staff and roles

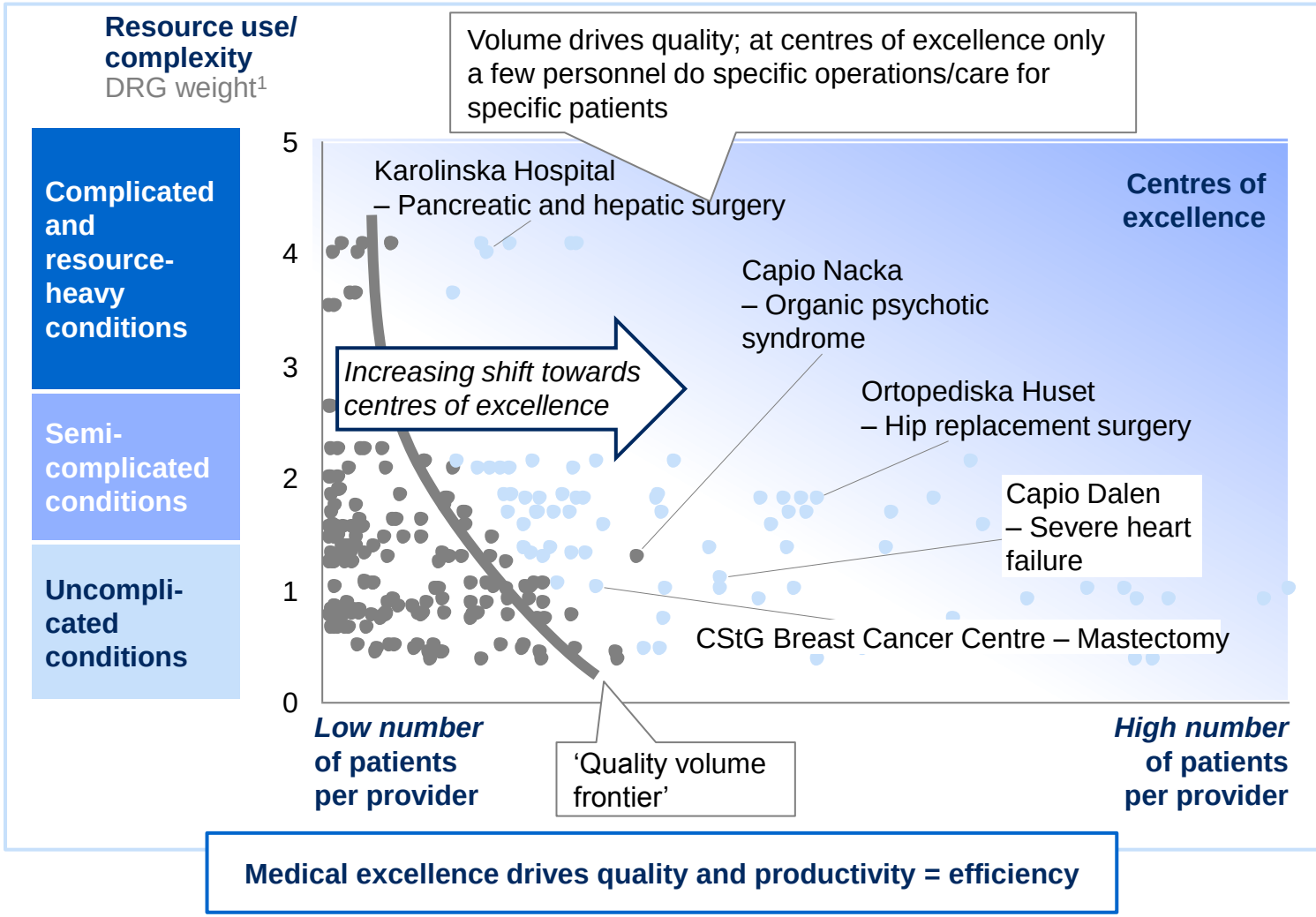
[1] Orthopaedic ward has three discrete sections.

All aspects of organisational culture at Capio are designed to support continuous improvement

	Description
Standardised protocols	• Care protocols are developed and continuously assessed and improved in specialist centres of excellence • These are shared, with training and support, with general hospitals and other specialist centres
Rigorous evaluation and information transparency	• **QPIs developed for each department and patient flow**, captured (performance and progress) within transparent dashboards and quality reports. QPIs cover: ○ clinically-reported outcome measures (CROMs) ○ patient-reported outcome measures (PROMs) ○ patient-reported experience outcomes measures (PREMs) ○ process measures • Performance informs the continuous adjustment of QPIs and development of care protocols • CROM and PROM are followed up annually; REM is tracked more frequently (monthly at Capio Movement) • Selected process measures monitored monthly (eg wounds requiring redressing; % of bleeding wounds at discharge)
People	• **Decentralised, local leadership** at the level of the 'care unit' (defined by patient flow). The role of the higher level of the organisation is to support the individuals and teams • Use of **financial and non-financial incentives,** eg publicly visible celebration of success, public encouragement of individuals/teams, and sharing of best practice with other teams and units • Focus on **training and internal recruitment:** ○ competence requirements are set for important activities, eg 'driving licence' for operating medtech equipment, radiation exposure and record keeping ○ training and educational opportunity for staff, including training in medical management capabilities ○ internal recruitment – it is organisational policy to always prioritise internal recruitment, resulting in a low employee turnover of 7.3% at St Göran's Hospital
Culture and values	• **Empowerment of staff:** clear and transparent decision-making – clear mandates and 'short routes' to reaching a decision make it easier for care units to adjust the patient pathway in line with new and proven care practices. Areas for improvement are discussed in a weekly staff meeting with decision-making authority • **Trust:** Capio Movement is a small team built on trusted relationships and a team mindset, eg two anaesthetists are responsible for their own staffing rosta (covering for vacations; on-call duties). Nurses have a high level of autonomy and responsibility – able to get and trusted to seek physician support when needed • **Evidence-based scientific approach**: when improvements to the care plan are suggested, these are tested and measured with intervention and control groups, data collection, measurement and follow-up

QPI, quality performance indicator

Capio's approach to specialisation and scale: operating at the right level of specialisation delivers the most effective care



[1] Diagnosis-related group (DRG), average weight is a measure of resource consumption.
Note: Selection of DRGs; based on Stockholm data; general data pattern applicable to most modern healthcare systems.

Socialstyrelsen